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ABSTRACT

The development of an objective diagnostic scale to measure atypical behavior is discussed. The Atypical Response Scale (ARS) is a structured projective test consisting of 17 items, each weighted 1, 2, or 3, that were tested for convergence and reliability. ARS may be individually or group administered in 10-15 minutes; hand scoring requires 90 seconds. The normative group consisted of 74 normal firemen and 74 hospitalized schizophrenics. Possible uses and limitations of ARS are discussed. (CK)

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Projective methods are wide band instruments. They are often unable to produce objective, highly accurate information in their original form. Holtzman (H) suggests that multiple choice R formats could be used to measure variables of particular interest.

The purpose of this study was the development of an objective scale to measure atypical behavior. The Atypical Response Scale (ARS) focuses on a small segment of behavior, atypical responding; the rationale being that by structuring the projective test, its bandwidth can be reduced with a corresponding gain in fidelity. I did not develop this scale for its own sake but as a research tool to study reality orientation.

Speaking briefly about the structure of ARS, the test consists of 17 items; each weighted either 1 (which is a typical R), 2 (a moderately typical R), or 3 (an atypical R). Thus, test scores could range from 17 (this would be the case where all typical choices were endorsed) to 51 (where all atypical choices were endorsed). Of the 148 Ss tested on final ARS, half were normal firemen and half were hospitalized persons diagnosed as "schizophrenic." Of the 74 schizophrenics tested, approximately 1/3 scored 30 or above - indicating inaccurate responding. Only one normal S obtained a score this high. Of the 74 normals tested, about 1/3 scored 23 or less; only two schizophrenics scored this low. This may indicate that ARS has some diagnostic utility for certain populations. ARS administration, which may be individual or in small groups, requires 10-15 minutes. The S must circle one of three choices for each item. Hand scoring takes about 90 seconds.
The specific instructions are:

On the answer sheet before you there are numbers, letters, and words. Here is a set of ink blots which were made by dropping ink on paper and folding it. Each ink blot has a number. I will show you these ink blots one at a time. Then look at the choices next to that number. Pick one choice out of the three given which looks most like that ink blot.

This is ink blot number one. Circle one letter next to the choice that looks most like this ink blot.

ED 059244

Concerning test development, initially 35 H cards (Set A) were presented to 20 aides and 20 schizophrenics. Each S gave one R to each card. By this method, an item pool of about 25 different Rs per card was collected.

Then these 35 H cards, each with 25 different Rs, were presented to three expert judges who rated each R along a 9-point Thurstone equal-appearing interval scale (see directly below).

Specifically, the following was presented to each expert judge: for each of the 35 H cards a one page print-out consisting of the 25 different Rs given to that particular H card and 9-point Thurstone equal-appearing interval scales (one Thurstone scale next to each R). The judges (each having received 35 one page print-outs and a set of H cards) were given the following directions:

On the following pages there are many different R's for each of 35 different Holtzman ink blot cards (Set a, 1-35). On the right of every R is a 9-point equal interval scale. Rate every R on the basis of how typical or atypical it is as a WHOLE R. Please look at each card when you make your judgment. Make your choice by circling the appropriate number on the scale to the right.

On the 9-point scale, 0 is very typical; 4 and 5 are moderately typical; 9 is very atypical. The numbers between these points represent gradations of typicality.

The convergence criteria established required that there be at least one R from each category; i.e., all expert judgments for that R were placed in the same category: either the T (typical) range (0-3), the M (moderate) range (3-6), or the A (atypical) area (6-9). By this method, 29 H cards were obtained (with three Rs for each: T, M, and A) that met the convergence criteria. When several Rs from a particular category (T, M, or A) were available, one was selected at random.

Recap briefly if you think people don't understand.

These 29 cards were administered to groups of normals and schizophrenics twice within one week to determine test-retest reliability. 12 items passed the reliability test. In summarizing so far, we started with 35 Holtzman cards -- 29 of these passed the convergence test, and 12 of these met the reliability criterion.

Since we specified that ARS should have at least 15 items in order to permit a large enough R range to permit discrimination and improve test reliability, I repeated the procedure just mentioned and obtained five new items in the process. Specifically, there were 17 items (from the 29 that demonstrated convergence) that did not meet the reliability criterion. Since all of these 17 items had other Rs that met the T-M-A convergence test, new convergent Rs were randomly selected. This comprised the second preliminary ARS (consisting of 17 items). This ARS format was then readministered to the same group of normals and schizophrenics that had previously responded to the first ARS format (29 items). This procedure yielded 5 new test-retest reliable, R-convergent items. The final ARS consists of 17 items tested for convergence and reliability.

A one-way ANOV was used to test the hypothesis that the schizophrenics would respond more atypically than the normals. This was confirmed in initial and replication studies (Fs were 57 and 29 respectively).

The current limitations of ARS are (1) there is presently no parallel form, (2) a limited normative group was used, and (3) the accuracy of the diagnostic label, "schizophrenia," is questionable.

The following uses are implied by ARS development. ARS could be useful for measuring the effects of certain experimental manipulations on atypical R production. Further, it would allow quantitative comparison of atypical Rs between different groups. Third, assuming a unitary dimension of unusual responding where normals are less atypical than schizophrenics, "TO WHAT EXTENT ARE CREATIVE PERSONS ATYPICAL RESPONDERS?" Fourth, ARS might serve as a device to help screen schizophrenic Rs from other psychopathological Rs.

At this time, my planc concerning future ARS development are uncertain.

## ATYPICAL RESPONSE SCALE (ARS) TABLES

### ARS Normal/Schizophrenic Discriminations

| Initial study | N | Mean | SD | F | P |
|---|---|---|---|---|---|
| Normal | 50 | 23.96 | 2.81 | 59.63 | < .01 |
| Schizophrenic | 50 | 29.40 | 4.11 | | |
| **Replication** | | | | | |
| Normal | 24 | 25.42 | 2.84 | 23.38 | < .01 |
| Schizophrenic | 24 | 29.71 | 3.29 | | |

ARS Holtzman Card Equivalents, Item Content, ARS # and Classification, and Test-Retest Correlation 1

| Holtzman Card # | ARS # | Item Content | Classification of ARS Rs: T,M,A[2] | r Sc[3] | r Fm[4] |
|---|---|---|---|---|---|
| 2 | 1 | a. Tie | A | | |
| | | b. Two people | T | .76 | .83 |
| | | c. Old snaggly tree | M | | |
| 3 | 2 | a. Nothing in that one | A | | |
| | | b. Bones | M | .85 | .71 |
| | | c. Sunrise | T | | |
| 10 | 3 | a. Couple of men and a shadow | T | | |
| | | b. Two turtles | A | .75 | .51 |
| | | c. Rug | M | | |
| 12 | 3 | a. People sitting on a beach | T | | |
| | | b. Waterfall | M | .76 | .84 |
| | | c. Octopus | A | | |
| 14 | 5 | a. The back of a rocking chair | M | | |
| | | b. The center is a rib cage | T | .63 | 1.00 |
| | | c. Ace of spades | A | | |
| 16 | 6 | a. Monkeys | M | | |
| | | b. Nurse | A | .69 | .88 |
| | | c. Human pelvis | T | | |
| 17 | 7 | a. Preacher's pulpit | A | | |
| | | b. Clouds | T | .47 | .88 |
| | | c. Animal facing sideways | M | | |
| 18 | 8 | a. Rear end of a woman | M | | |
| | | b. Somebody | A | .84 | .65 |
| | | c. The head of an elephant | T | | |
| 19 | 9 | a. Crow daddy | A | | |
| | | b. Campfire | M | .72 | .67 |
| | | c. People dancing | T | | |
| 20 | 10 | a. Tell me what it is | A | | |
| | | b. Flowers | T | .85 | .65 |
| | | c. Fish and shadows on the bottom of a lake | M | | |

| | | | | Sc | Fm |
|---|---|---|---|---|---|
| 21 | 11 | a. Birds on trees | T | | |
| | | b. Bat | M | .55 | .54 |
| | | c. Pink specks | A | | |
| 23 | ;2 | a. Solid mass of rock | T | | |
| | | b. Big hand | A | .96 | 1.00 |
| | | c. Two bulldogs | | | |
| 24 | 13 | a. Tadpole possum picture | A | | |
| | | b. Forest in the wintertime | T | .64 | .74 |
| | | c. Gust of wind blowing a tree | M | | |
| 31 | 14 | a. I see lines | A | | |
| | | b. A bat | T | .91 | .76 |
| | | c. Mouth of a dead animal | M | | |
| 32 | 15 | a. Halls of space | A | | |
| | | b. A flower vase | M | .50 | .72 |
| | | c. Two dinosaurs | T | | |
| 34 | 16 | a. Nothing | A | | |
| | | b. Two spiders | M | .50 | 1.00 |
| | | c. Two men fighting | | | |
| 35 | 17 | a. A bat | T | | |
| | | b. An animal | M | .67 | 1.00 |
| | | c. A mirror | | | |

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[1]All correlations are significant at the $p < .05$ level.

[2]T=1 point (typical); M=2 pts. (moderate); A= 3 pts. (atypical).

[3]Sc=schizophrenics (N=20 for every item).

[4]Fm=normal firemen (N=16 for every item).